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Modification of the U10B Infrared Microscope to Add an External Detector for Far-Infrared Microspectroscopy

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Beamline(s): U10B

The U10B ThermoSpectra-Tech Continuum microscope is being modified to add an external long-wavelength detector. This addition does not disrupt the existing optical configuration of the microscope. The work entails designing and adding a platform above the microscope to hold the detector and transfer optics. The collimated beam of the microscope is intercepted before the standard internal detectors, and redirected to a parabolic focusing optic. The intercepting mirror is retractable on a slide rail to allow rapid changeover between the normal and external detectors. The design will allow for different detectors to be used, and simple adjustment of alignment. The liquid helium-cooled external detector allows spectroscopy below the 750 cm^{-1} cutoff of the standard MCT-A detector, down to the 350 cm^{-1} limit of the KBr beamsplitter. Longer wavelengths (< 350 cm^{-1}) will be achieved by the use of a silicon beamsplitter. This project is in progress and is a PRT collaboration with the Canadian Light Source.